

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A reflective mask blank comprising a substrate, and a multilayer reflective film for reflecting an exposure light and an absorber layer for absorbing the exposure light, which are formed on said substrate in the order named, said reflective mask blank characterized in that

said absorber layer has a layered structure comprising at least an uppermost layer and a lower layer other than it, and said uppermost layer exhibits a reflectance of 20% or less with respect to a light having an inspection wavelength for use in an inspection of an absorber layer pattern formed in said absorber layer and further is formed of an inorganic material having a resistance against an etching condition in forming a pattern in said lower layer, an etching selection ratio between said uppermost layer and said lower layer of the absorber layer when forming the pattern in said lower layer is 5 or more.

2. (currently amended): A reflective mask blank comprising a substrate, and a multilayer reflective film for reflecting an exposure light and an absorber layer for absorbing the exposure light, which are formed on said substrate in the order named, said reflective mask blank characterized in that:

said absorber layer has a layered structure comprising at least an uppermost layer and a lower layer other than it, and said uppermost layer exhibits a contrast value of 40% or more relative to a layer just under said absorber layer with respect to a light having an inspection wavelength for use in an inspection of an absorber layer pattern formed in said absorber layer and further is formed of an inorganic material having a resistance against an etching condition in forming a pattern in said lower layer, an etching selection ratio between said uppermost layer and said lower layer of the absorber layer when forming the pattern in said lower layer is 5 or more, said contrast value given by an equation of:

$$\text{Contrast Value (\%)} = (R_2 - R_1) / (R_2 + R_1) \times 100$$

(where R_1 represents a reflectance on the surface of the uppermost layer with respect to the light having the inspection wavelength and R_2 represents a reflectance on the surface of the layer just under the absorber layer).

3. (original): A reflective mask blank according to claim 1 or 2, characterized in that the inspection wavelength for use in the inspection of said absorber layer pattern falls within a range of 190 nm to 260 nm.

4. (canceled).

5. (previously presented): A reflective mask blank according to claim 1 or 2, characterized in that said lower layer of the absorber layer is made of a material containing tantalum (Ta) and said uppermost layer is made of a material containing silicon (Si).

6. (previously presented): A reflective mask blank according to claim 1 or 2, characterized in that a buffer layer having a resistance against an etching condition in forming the pattern in said lower layer of the absorber layer and correcting the pattern is further provided between said multilayer reflective film and said absorber layer.

7. (original): A reflective mask blank according to claim 6, characterized in that said buffer layer is made of a material containing chromium (Cr).

8. (previously presented): A reflective mask characterized in that said reflective mask is produced by forming the pattern in the absorber layer of the reflective mask blank according to claim 1 or 2.

9.-11. (canceled).

12. (previously presented): A reflective mask characterized in that said reflective mask is produced by forming the pattern in the absorber layer of the reflective mask blank according to claim 6.

13. (new): A reflective mask blank according to claim 1 or 2, characterized in that said lower layer of the absorber layer is made of a material containing tantalum (Ta) and said uppermost layer is made of a material containing chromium (Cr).

14. (new): A reflective mask blank according to claim 1 or 2, characterized in that said lower layer of the absorber layer is made of a material containing chromium (Cr) and said uppermost layer is made of a material containing tantalum (Ta).

15. (new): A reflective mask blank according to claim 1 or 2, characterized in that said lower layer of the absorber layer is made of a material containing chromium (Cr) and said uppermost layer is made of a material containing silicon (Si).

16. (new): A reflective mask blank according to claim 15, characterized in that a buffer layer having a resistance against an etching condition in forming the pattern in said lower layer of the absorber layer and correcting the pattern is further provided between said multilayer reflective film and said absorber layer, said buffer layer is made of a material containing tantalum (Ta).

17. (new): A reflective mask blank according to claim 1 or 2, characterized in that said uppermost layer is formed to a thickness of 15 to 30 nm.

18. (new): A reflective mask blank according to claim 1 or 2, characterized in that said absorber layer has a film thickness of 30 to 100 nm.

19. (new): A reflective mask blank according to claim 1 or 2, characterized in that said uppermost layer has an EUV absorption coefficient of 0.01 or more.

20. (new): A reflective mask blank according to claim 1 or 2, characterized in that said lower layer of the absorber layer has an absorption coefficient with respect to a wavelength of an exposure light that is 0.025 or more.

21. (new): A reflective mask blank according to claim 6, characterized in that reflectances with respect to light having inspection wavelength decrease in order of a surface of the multilayer reflective film, a surface of the buffer layer, and a surface of the absorber layer.

22. (new): A reflective mask blank comprising a substrate, and a multilayer reflective film for reflecting an exposure light and an absorber layer for absorbing the exposure light, which are formed on said substrate in the order named, said reflective mask blank characterized in that

said absorber layer has a layered structure comprising at least an uppermost layer and a lower layer other than it,

said uppermost layer exhibits a reflectance of 20% or less with respect to a light having an inspection wavelength for use in an absorber layer pattern formed in said absorber layer and further is formed of inorganic material having a resistance against an etching condition in forming a pattern in said lower layer,

a buffer layer having a resistance against an etching condition in forming the pattern in said lower layer of the absorber layer and correcting the pattern is further provided between said multilayer reflective film and said absorber layer,

said uppermost layer exhibits a contrast value of 40% or more relative to said buffer layer and said multilayer reflective film with respect to said light having the inspection wavelength, said contrast value given by an equation of:

$$\text{Contrast Value (\%)} = (R_1 - R_2) / (R_2 + R_1) \times 100$$

(where R_1 represents a reflectance on the surface of the uppermost layer with respect to the light having the inspection wavelength and R_2 represents a reflectance on the surface of said buffer layer or said multilayer reflective film.

23. (new): A reflective mask blank comprising a substrate, and a multilayer reflective film for reflecting an exposure light and an absorber layer for absorbing the exposure light, which are formed on said substrate in the order named, said reflective mask blank characterized in that

said absorber layer has a layered structure comprising at least an uppermost layer and a lower layer other than it,

a buffer layer having a resistance against an etching condition in forming a pattern in said lower layer of the absorber layer and correcting the pattern is further provided between said multilayer reflective film and said absorber layer,

said uppermost layer exhibits a contrast value of 40% or more with relative to said buffer layer and said multilayer reflective film with respect to a light having an inspection wavelength for use in an absorber layer pattern formed in said absorber layer and further is formed of

inorganic material having a resistance against an etching condition in forming the pattern in said lower layer, said contrast value given by an equation of:

$$\text{Contrast Value (\%)} = (R_1 - R_2)/(R_2 + R_1) \times 100$$

(where R_1 represents a reflectance of the surface of the uppermost layer with respect to the light having the inspection wavelength and R_2 represents a reflectance on the surface of said buffer layer or said multilayer reflective film.